

22. The process according to Claim 21, wherein the first film and the second film are forwarded at a speed of from 120 to 500 feet per minute, with the patterned raised surface having a surface roughness of from 50 to 500 root mean square, and the release coating on the cooling roller having a Shore A hardness of from 40 to 100.---

REMARKS

I. Election under 35 U.S.C. §121

Paragraph 1 of the 12 February Office Action states that the claims are directed to distinct species of the claimed invention, including Species I (Claims 1-18, extruding two films), Species II (Claims 19 and 20, extruding one film), and that upon election of Species II, subspecies II-A (tubular film) and subspecies II-B (flat film).

In response to the restriction requirement, Applicants elect Species I, which includes Claims 1-18, without traverse.

Although Applicants elect Species I without traverse, Applicants note that in imposing the species and subspecies restriction requirements, the PTO is going on the record with the position that the species and subspecies are independent and patentably distinct relative to one another, i.e., are *patentable* over one another. This is a significant admission in that, for example, in combination with all other features recited in the independent claims, the PTO is taking the position that it would not have been obvious to extrude one film if the prior art discloses the extrusion of two films; that it would not have been obvious to use a flat film if the prior art discloses the extrusion of a tubular film, etc., and vice versa. If the PTO does not want to be bound by these admissions, Applicants suggest that the restriction requirement be withdrawn. Otherwise,

these admissions are open for use by Applicants during prosecution of the claims of both this application as well as any divisional applications filed on the patentably distinct species of the invention.

II. The Pending Claims and the Amendments to the Claims, Drawings, and Specification

With the entry of the above amendment, Claims 1-18, 21, and 22 are pending, with Claim 1 being the only independent claim. With the election of Species I, Claims 19 and 20 are being canceled, as they are drawn to a nonelected invention.

Claim 1 is amended to further recite the step of winding up or transporting the first and second films after they are heat sealed to one another, with the inflatable chambers uninflated. Support for this amendment can be found in the specification at, for example, Page 11 lines 12-15 and Page 12 lines 1-12. In addition, Page 11, line 13 of Applicants' specification discloses the laminated materials are made and shipped in uninflated, in high density form, ready for inflation by the end-user, as this is more efficient than shipping the low density inflated product.

Claim 8 is amended to recite the pair of rolls as a first roll and a second roll, in order to provide the antecedent basis for the recitation of the first and second rolls in Claim 10.

Claim 18 is amended to depend from Claim 17, rather than from Claim 16.

Newly-presented Claim 21 recites a process speed of at least 120 feet per minute, with the raised surface roller having a release coating thereon and raised surface edges rounded off to a radius of from 1/256 inch to 3/8 inch, and with the process further comprising a release-coated cooling roller downstream of and in nip relationship with the raised surface roller. Support for Claim 21 can be found in Applicants' specification at, for example, Paragraph 42 (Page 18 line 13

through Page 19 line 6). Newly-presented Claim 22 recites a process of from 120 to 500 feet per minute, with the patterned raised surface having a surface roughness of from 50 to 500 root mean square, and the release coating on the cooling roller having a Shore A hardness of from 40 to 100. Support for Claim 22 can be found in Paragraphs 39, 41, and 42 (i.e., Pages 17-19 of Applicants' specification).

Applicants respectfully request amendment of both FIG. 11 and FIG. 13, and provide new proposed figures indicating the amendments in red ink. New Proposed FIG. 11 is identical to FIG. 11 as filed, but has reference numerals (and associated lead lines) 35, 36, 37, and 38 deleted therefrom, as suggested in the Office Action. New Proposed FIG. 13 has reference numerals 42 and 43 added thereto, referring to "chambers" and "connecting channels", respectively, as disclosed on Page 22 lines 5-7 of Applicants' specification.

The amendments to the specification, claims, and drawings contain no new matter.

III. The Various §103 Rejections of the Claims

In Paragraph 11 of the 12 February Office Action, Claims 1-5, 7-13, and 15 are rejected under 35 USC 103(a) as unpatentable over U.S. Patent No. 4,657,625, to Kawakami ("KAWAKAMI") in view of U.S. Patent No. 3,703,430, to Rich ("RICH"). The Office Action states that KAWAKAMI is directed to producing an inflated article such as bubble pack, and that KAWAKAMI teaches simultaneously extruding first and second flat films, cooling the films to below their fusion temperature using cooling rolls, then heating the films to above their fusion temperature using heating rolls, and then contacting the films under pressure using a pair of nip rolls (one being patterned) to form the inflated article. The Office Action admits that KAWAKAMI is silent as to heating selected

portions of the film by passing them through heated nip rolls, but that the cooled films of KAWAKAMI are the same as preformed films and that it is known in the art to use heated nip rolls to fusion bond two films to produce inflated articles. The Office Action concludes that it would have been well within the purview of one of ordinary skill in the art at the time the invention was made to use in place of the separate heating and pressure rolls of KAWAKAMI heated nip rolls as suggested by RICH as an inflatable article having inflatable chambers would have been produced.

In response, Applicants contend that Claims 1-5, 7-13, and 15 are patentable over KAWAKAMI in view of RICH. Applicants acknowledge that KAWAKAMI discloses extruding two films, each of which is cooled on cooling rollers, followed by each being heated by being passed over a heated roller, followed by being passed over a forming roller and through a nip between the forming roller and a pressure roller, and thereafter over a peeling roller, to result in sheet having many hollow bodies, the sheet being suitable for use as cushioning or insulation. Applicants also acknowledge that RICH discloses passing two films through a nip between two rolls which apply heat and pressure to fusion bond the films to one another, to produce a cushioning or insulation material.

Applicants point out that neither KAWAKAMI nor RICH discloses an article which is actually “inflatable”. Rather, the articles disclosed in both KAWAKAMI and RICH have individually sealed cushioning cells. While the cells in KAWAKAMI encapsulate air and are never “inflated”, the individual cells in RICH could arguably be referred to as having been “inflated” during their manufacture. However, in both KAWAKAMI and RICH, each cell is an individual chamber, independent from the remaining cells, with air being trapped in each cell, and no inlet for air to be added to any of the cells, i.e., no inlet for subsequent “inflation”. That is,

unlike Applicants' claimed process, neither KAWAKAMI nor RICH teaches or suggests a process of sealing two films together to produce inflatable cells. Applicants' claims recite a process for making an article which is inflatable (emphasis added). To emphasize this point, Applicants' Claim 1 has been amended to recite the additional step of "winding up or transporting the first and second films after they are heat sealed to one another, with the inflatable chambers uninflated."

Neither KAWAKAMI nor RICH teaches or suggests a process of sealing two films together to produce an article having inflatable chambers, followed by winding up or transporting the first and second films after they are sealed to one another, with the inflatable chambers uninflated. The processes of both KAWAKAMI and RICH inherently trap air between the films which are fusion bonded to one another, rendering it impossible to wind up or transport the resulting article with the inflatable chambers uninflated. Applicants contend that this is a first reason that the Office Action fails to establish a prima facie case of obviousness of any one or more of amended Claims 1-5, 7-13, and 15 as unpatentable over KAWAKAMI in view of RICH.

In addition, Applicants direct attention to the recitation of "heating selected portions of at least one of the first and second films to a temperature above a fusion temperature" in pending Claim 1. Applicants note that both KAWAKAMI and RICH appear to disclose processes in which the entirety of the films are heated, rather than "selected portions" of the films as recited in Applicants' Claim 1. In KAWAKAMI, flat films 2 and 3 are heated by being in flat contact with respective flat heating rollers 7 and 10. In RICH, the entirety of flat films 25 and 26 appear to be blown into contact with the recess-containing surfaces of respective heated rollers 62 and 60. In Applicants' process, the heating of the films to a temperature above the fusion temperature is confined to less than the entirety of the film. In both KAWAKAMI and RICH, the disclosed

processes do not appear to heat only a portion of either of the films, without heating a remainder of the film.

If Applicants' process is altered to heat the entirety of each of the films to a temperature above the fusion temperature, and the films thereafter brought together at this temperature (i.e., as in KAWAKAMI and RICH), the films would not be sealed together in a manner to form the "inflatable chambers" recited in Applicants' Claim 1. Rather, the films would fuse together in an uncontrollable fashion, likely resulting in continuous or near-continuous fusion over the entire junction between the films. Applicants have disclosed and claimed a process in which only selected portions of the films are heated and sealed together, with the resulting seal providing a series of inflatable chambers. This is a second reason that the Office Action fails to make out a prima facie case of obviousness of any one or more of Applicants' amended Claims 1-5, 7-13, and 15.

In Paragraph 6 of the 12 February Office Action, Claim 6 is rejected under 35 USC 103(a) as unpatentable over KAWAKAMI in view of RICH, further in view of Great Britain Patent No. 978,654, to Chavannes ("CHAVANNES"). The Office Action states that KAWAKAMI and RICH are applied as set forth above, and that they teach all of the recited features except using separate extruders to extrude the first and second films, but that CHAVANNES suggests using separate film extruders.

In Paragraph 13 of the 12 February Office Action, Claims 14 and 16-18 are rejected under 35 USC 103(a) as unpatentable over KAWAKAMI and RICH, further in view of U.S. Patent No. 4,576,669, to Caputo ("CAPUTO"). The Office Action states that KAWAKAMI and RICH are applied as set forth above and that they teach all of the features of Claims 14 and 16-18 except for

the release coating on the nip rolls and cooling the inflated article with a cooling roll. More particularly, with respect to Claim 14 the Office Action states that it would have been obvious to coat the nip rolls with a release coating as suggested by CAPUTO. As to Claims 16-18 the Office Action states that it would have been obvious to modify the peeling roller of KAWAKAMI as modified by RICH with a cooled peeling roller as suggested by CAPUTO, in order to accelerate the cooling of the inflated article, and that as to the hardness of the cooling roller, one of ordinary skill in the art would be readily expected to determine the hardness without undue experimentation.

In response, Applicants again rely on all of the reasons set forth above for the patentability of Claim 1, upon which each of Claims 6 and 16-18 immediately or ultimately depend. With respect to the rejection of Claim 6, Applicants acknowledge that CHAVANNES discloses the use of two extruders, but Applicants point out that like KAWAKAMI and RICH, CHAVANNES teaches making an article having closed cells containing air. CHAVANNES does not appear to teach or suggest making a sealed article having inflatable chambers and thereafter winding up or transporting the sealed article with the chambers uninflated.

In addition, Applicants direct attention to the disclosure in CAPUTO of heating a first film on a heated roll to a temperature so that the film can subsequently be thermoformed on a cooled roll having cavities therein, with a second film being heated on another heated roll, so that the second film can be welded to the first film in the areas around the cavities in the first film. See the Abstract of CAPUTO. As with KAWAKAMI and RICH, the process of CAPUTO differs from Applicants' claimed process because it results in an air-cushioning product which is not "inflatable", but rather is ready for immediate use or is wound up with the individual air-filled cells. Again, see Abstract of CAPUTO. As a result, KAWAKAMI in view of RICH and

CAPUTO does not set forth a prima facie case of obviousness of any one or more of Applicants' Claims, as amended above.

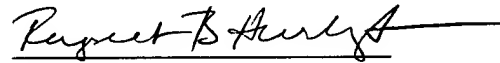
As to the disclosure of CAPUTO and the particular features recited in Applicants' Claims 16-18, Applicants direct attention to Paragraph 42 of their specification. More particularly, there is a relationship between a process speed of at least 120 feet per minute and the need for the raised surface roller to have a release coating, as well as the presence of the cooling roller downstream of the raised surface roller. These additional features are not of as much advantage if the process speed is less than 120 feet per minute. Applicants acknowledge that CAPUTO discloses the step of passing the sealed article part way around a cooling roller after the forming roller, as well as coating the nip rolls with a release coating a cooling roller. However, it should again be noted that Applicants' claimed process involves heating only selected portions of the film above the fusion temperature, with the unheated portions not requiring a downstream cooling roller or a release coating on the nip rollers due to the hot state of the film.

Thus, Applicants contend that the Office Action fails to establish that one of ordinary skill in the art would have seen the need for the use of a cooling roller or release coatings in a process in which only selected portions of the films are being heated. Applicants contend that no motivation for these process features is present in CAPUTO, in contrast to a process in which the entirety of both films is being heated to the fusion temperature.

Conclusion

Accordingly, Applicants respectfully request reconsideration of the patentability of the claims, as amended above, with a view towards allowance.

Respectfully Submitted,



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enclosures: Proposed New FIG. 11
Proposed New FIG. 13

APPENDIX

The amendments to the claims are set forth below.

1. (Once Amended) An integrated process for making an inflatable laminated article, comprising the steps of:
 - (A) extruding a first film and a second film;
 - (B) cooling the first film and the second film so that the films will not fuse to one another upon contact with each other;
 - (C) contacting the first film with the second film; [and]
 - (D) heating selected portions of at least one of the first and second films to a temperature above a fusion temperature, so that the first and second films are heat sealed to one another at a selected area, with the selected area providing a heat seal pattern which provides inflatable chambers between the first film and the second film [.]; and
 - (E) winding up or transporting the first and second films after they are heat sealed to one another, with the inflatable chambers uninflated.

8. (Once Amended) The process according to Claim 1, wherein the heating is performed by passing the first and second films together through a nip formed by [a pair of rolls] a first roll and a second roll, one of the rolls having a patterned raised surface and at least one of the pair of rolls being heated.

18. (Once Amended) The process according to Claim [16] 17, wherein the cooling roller has a Shore A hardness of from 40 to 100.